NOV 8 1982

Y 4. EC 7: M 74/9/982

MONETARY POLICY

ORIGINAL

HEARING

BEFORE THE

SUBCOMMITTEE ON MONETARY AND FISCAL POLICY

OF THE

JOINT ECONOMIC COMMITTEE CONGRESS OF THE UNITED STATES

NINETY-SEVENTH CONGRESS

SECOND SESSION

JUNE 16, 1982

Printed for the use of the Joint Economic Committee

COMPLETED

U.S. GOVERNMENT PRINTING OFFICE
98-796 O WASHINGTON: 1982

JOINT ECONOMIC COMMITTEE

(Created pursuant to sec. 5(a) of Public Law 304, 79th Congress)

HOUSE OF REPRESENTATIVES

HENRY S. REUSS, Wisconsin, *Chairman*
RICHARD BOLLING, Missouri
LEE H. HAMILTON, Indiana
GILLIS W. LONG, Louisiana
PARREN J. MITCHELL, Maryland
FREDERICK W. RICHMOND, New York
CLARENCE J. BROWN, Ohio
MARGARET M. HECKLER, Massachusetts
JOHN H. ROUSSELOT, California
CHALMERS P. WYLIE, Ohio

SENATE

ROGER W. JEPSEN, Iowa, *Vice Chairman*
WILLIAM V. ROTH, JR., Delaware
JAMES ABDNOR, South Dakota
STEVEN D. SYMMS, Idaho
PAULA HAWKINS, Florida
MACK MATTINGLY, Georgia
LLOYD BENTSEN, Texas
WILLIAM PROXMIRE, Wisconsin
EDWARD M. KENNEDY, Massachusetts
PAUL S. SARBANES, Maryland

JAMES K. GALBRAITH, *Executive Director*
BRUCE R. BARTLETT, *Deputy Director*

SUBCOMMITTEE ON MONETARY AND FISCAL POLICY

SENATE

ROGER W. JEPSEN, Iowa, *Chairman*
PAUL S. SARBANES, Maryland

HOUSE OF REPRESENTATIVES

JOHN H. ROUSSELOT, California,
Vice Chairman
HENRY S. REUSS, Wisconsin
LEE H. HAMILTON, Indiana
CHALMERS P. WYLIE, Ohio

CONTENTS

WITNESSES AND STATEMENTS

WEDNESDAY, JUNE 16, 1982

	Page
Wylie, Hon. Chalmers P., member of the Subcommittee on Monetary and Fiscal Policy, presiding: Opening statement	1
Dewald, William G., professor of economics, Ohio State University, and editor, Journal of Money, Credit, and Banking	1
Lombra, Raymond E., professor of economics, Pennsylvania State University	6
Rasche, Robert H., professor of economics, Michigan State University	31

SUBMISSIONS FOR THE RECORD

WEDNESDAY, JUNE 16, 1982

Dewald, Williams G.: Response to additional written questions posed by Representative Wylie	41
Lombra, Raymond E.:	
Prepared statement	11
Response to additional written questions posed by Representative Wylie	43
Rasche, Robert H.: Response to additional written questions posed by Representative Wylie	45

MONETARY POLICY

WEDNESDAY, JUNE 16, 1982

CONGRESS OF THE UNITED STATES,
SUBCOMMITTEE ON MONETARY AND FISCAL POLICY
OF THE JOINT ECONOMIC COMMITTEE,
Washington, D.C.

The subcommittee met, pursuant to notice, at 10:35 a.m., in room 2247, Rayburn House Office Building, Hon. Chalmers P. Wylie (member of the subcommittee) presiding.

Present: Representatives Wylie and Richmond.

Also present: Robert E. Weintraub, professional staff member; and Charles H. Bradford, assistant director.

OPENING STATEMENT OF REPRESENTATIVE WYLIE, PRESIDING

Representative WYLIE. Welcome to the Subcommittee on Monetary and Fiscal Policy of the Joint Economic Committee. We are pleased to have you here this morning to talk about interest rates and monetary control and all of those good subjects.

I am especially pleased to welcome Prof. Bill Dewald, who is a constituent of mine. He is editor of the prestigious Journal of Money, Credit, and Banking. Last year he had a symposium on monetary control, and I was proud to be asked to be the moderator of that panel. I thought it was very worthwhile.

And, oh, yes, Mr. Rasche was on the panel, and I should mention that. We are glad to have you here this morning. Mr. Rasche is a professor at Michigan State University, and you, Mr. Dewald, are professor of economics at Ohio State University.

And Mr. Lombra, we welcome Mr. Lombra to the deliberations of the subcommittee.

And with that I think we will go ahead and call on you first, Professor Dewald, if you would like to be the lead witness.

STATEMENT OF WILLIAM G. DEWALD, PROFESSOR OF ECONOMICS, OHIO STATE UNIVERSITY, AND EDITOR, JOURNAL OF MONEY, CREDIT, AND BANKING

Mr. DEWALD. Thank you, Congressman Wylie.

A long-term Government bond presently yields more than 13 percent in dollar terms annually. In the late 1950's, when there was essentially no inflation, Government bonds yielded 3 to 4 percent, which was their real yield too since the value of money was not depreciating. At 4 percent, each dollar of purchasing power doubles in 18 years.

In contrast, if the current 3-percent inflation rate persisted, Government bonds would be yielding more than a 10-percent real yield. At 10 percent each dollar doubles in only 7 years. At a 10-percent real yield, $20,000 invested now would be worth nearly $1 million in purchasing power in 40 years. The incentives to save appear truly spectacular, but so do the burdens of debt.

To what can high real interest rates be attributed? Some blame large, current and prospective, Federal Government deficits; others, a highly restrictive monetary policy. There are reasons to be suspicious of both views.

FEDERAL DEFICITS

Large Federal deficits doubtless can be important. In every single wartime experience and in every hyperinflation, large government deficits have been associated with accelerations in monetary growth and inflation. The question is what would be the effect of a large Federal deficit without accelerated monetary growth as is the promised policy of the current administration?

The historical record shows instances when large deficits were not accompanied by rising interest rates, as in the 1930's in the United States, or more recently as in Germany and Japan, both of which kept monetary growth, inflation and interest rates comparatively low despite comparatively high government budget deficits.

To be sure, Federal deficits might affect real interest rates. There is no denying that in a national income accounting sense Federal deficits must be financed by the excess of private saving over investment. There is also no denying that an increase in the demand for credit from any source tends to increase interest rates. The question is how much.

The increase is moderated by adjustments in the market as private savers and lenders are induced to reduce demands for credit. The more sensitive market participants are to interest rates; that is, the more elastic their responses, the less interest rates would have to increase.

It is clear that the Reagan administration is among the elasticity optimists in believing that such substitutions in the marketplace will eventually accommodate budget deficits without much increase in real interest rates.

Even if real interest rates should stay high for a protracted period of time, that is not all bad. If the administration sticks to its program and the Federal Reserve keeps monetary growth low and prevents inflation from reigniting, budget deficits would at least be financed by selling securities in the market to willing buyers. That is less arbitrary in some ways than raising taxes or unexpectedly depreciating the value of money.

Savers have been cheated for years because the Government financed deficits excessively by issuing base money instead of selling securities. Consequently, there may be some economic justice in high real yields today to compensate savers for all the years they had negative returns.

How did inflation and nominal interest rates get so high in the first place? It is no coincidence that the Federal Reserve more than doubled its holdings of government securities from 1970 to 1980 and that the price level more than doubled, too. When the Federal Reserve buys securities, if pays for them by issuing base money, which consists or currency and coin and credits to reserve deposit accounts that

banks keep with the Federal Reserve. Such increases in base money fuel increases in bank credit and deposits which in turn are reflected in growing demands for goods and services, and inflation. The fact is that the Federal Reserve didn't fight inflation this past decade but created it, and interest rates reflected it.

INFLATIONARY EXPECTATIONS

It is widely recognized that today's high interest rates reflect not solely the current supplies and demands for credit but anticipations with respect to the future and particularly with respect to inflation. The threat of inflation remains the No. 1 U.S. economic problem despite the fact that it has fallen substantially. People don't believe it will stay down. They know that economic policy can battle inflation successfully.

The quarterly inflation rate fell from 11 or 12 percent to 4 percent from 1975 through 1976 and this past year inflation fell comparably. On both occasions and many others as well, monetary growth decelerated, there was a recession, and then inflation fell.

The public are not such fools that they don't recognize the prospects for a repeat of the same pattern that rekindled inflation in the past after it had nearly been extinguished. They know that in the 1970's large government deficits were associated with accelerated monetary growth and they expect that future deficits as budgeted portend more of what they have seen before. Their expectations of future inflation are basically what keep interest rates high even though current inflation is low.

MONETARY POLICY AND THE LEVEL AND VARIABILITY OF INTEREST RATES

Is the Federal Reserve contributing to high interest rates by keeping monetary growth too low and to interest rate volatility by keeping monetary growth within too narrow a growth path? The answer to these questions is no. The problem now is not that such monetarist propositions have become the guiding philosophy of the Federal Reserve. Quite the contrary. In the wild cyclical experiences of the past 2½ years, the same old pattern of falling monetary growth before and during recessions and expanding monetary growth before and during expansions has been observed. The public has caught on. But has the Federal Reserve?

In the past 6 months, the monetary growth rate has been reaccelerated not just to a level that would be associated with stable noninflationary growth in the economy, but to a level that, if maintained, would bring the inflation rate back to its level of 1 year ago, which is being reflected in rising interest rates now despite low current inflation. That is not monetarism. Monetarism has been given a bad name and blamed for high real interest rates. But policy has not been monetarist. The level of interest rates won't fall until investors believe that the Federal Reserve will keep monetary growth down and inflation out of the economy.

The variability of interest rates is also accountable to the Federal Reserve's not keeping money within a narrow enough growth path. I disagree with those Fed watchers who attribute increased interest rate

volatility in any important sense to its new operating procedures. It now manipulates factors that determine nonborrowed bank reserves, a target level of which is set to achieve desired monetary growth. Before October 1979, the Federal funds rate had been the proximate target of its open market operations.

The Federal funds rate is the interest rate on overnight loans of reserve deposits with Federal Reserve Banks. It is true that the Federal funds rate gyrates more from transaction to transaction now than it did when the Federal Reserve conducted its open market operations to confine the funds rate within narrow bounds. But far more important is that there has been increased volatility in monthly or quarterly average interest rates and it is directly attributable to increased volatility in monetary growth.

Look at the record. From April 1980 through April 1981, M_1 growth at 11.1 percent was well above target. The Treasury bill rate, which had fallen to 7 percent in June 1980, rose to a peak of more than 16 percent in May 1981. It rose because of excessive monetary growth that became inflationary. It peaked because monetary policy became genuinely restrictive.

Monetary growth was negative in both May and June 1981 and remained comparatively low through October. The Treasury bill rate fell from its May peak of 16.3 percent to less than 11 percent in November and December 1981. Then the inflationary pattern was repeated. From October 1981 through April 1982, M_1 growth was reaccelerated to an annual rate of 9.3 percent. It is no surprise that the Treasury bill rate has been rising again.

Note well that increased monetary growth was associated with increased interest rates, and decreased monetary growth with decreased interest rates. The only sense in which monetarism can be blamed for increased interest rate variability is that markets have become monetarist and the Federal Reserve has not.

To repeat, interest rate volatility is not attributable to a reduction in short-term variation in monetary growth since 1979. Rather, both monetary growth and interest rates have been more variable. Markets have become convinced that money matters in affecting inflation and interest rates, and thus, in the absence of a stable longrun trend in monetary growth, interest rates rise and fall in response to every monetary growth blip.

What we need now and in the future is a monetary control procedure that instills the public with confidence that, in the long run, monetary growth will not deviate from a stable noninflationary growth path. Markets, having been fooled so often in the past, have become hypersensitive to shortrun monetary growth variation. If shortrun interest rate volatility is bad, the way to reduce it is to keep monetary growth within a more narrow month-to-month variation and not to hide the data in statistical obfuscation.

HOW TO CONTROL MONETARY GROWTH

Can the Federal Reserve control monetary growth? I think it can. How? It can be controlled by forgetting about shortrun interest rate variability and focusing on using open market operations to control the level of the money supply on an average basis over a weekly reserve settlement period for an average of reserve settlement periods.

The Federal Reserve has information daily about major components of the money supply for a week earlier. It conducts open market operations daily, generally in response to interest rate or bank reserves data, not monetary growth data. Nevertheless, its open market operations pump base money into the economy or absorb it and have readily perceived effects on monetary growth. What is not done but should be is to establish a feedback monetary control procedure to offset previous deviations of monetary growth from target.

That is the key to managing monetary growth. It is the same control procedure that is used to keep a car on the highway.

In the case of monetary control, if monetary growth last month was above a noninflationary target, in the current month, the Federal Reserve should aim open market operations on a weekly and monthly basis to reduce the monetary growth rate to less than it was the previous month so that the daily average amount of money is reduced enough to achieve the target.

The Federal Reserve should forget about the reentry problem which involved getting monetary growth that has deviated from the target back on course.

The kind of money supply policy I envision would also have the Federal Reserve System eliminate discounting altogether. Such structural changes would improve monetary control.

But even with existing institutions, when the Federal Reserve wanted to stimulate monetary growth, it could pump sufficient reserves into the financial system by open market purchases of securities or reductions in required reserve ratios to create excess reserves which would provide a genuine incentive to expand credit and deposits.

And when monetary growth was excessive, the Federal Reserve could absorb bank reserves so that there were insufficient reserves readily available to meet reserve requirements which, under lagged reserve accounting, are fixed during the current reserve settlement period.

The consequences of such monetary control approach might well have the Federal funds rate vary a lot at reserve settlement dates. But perhaps not.

In an environment where the Federal Reserve didn't automatically supply reserves to meet requirements as it does now by open market operations and lending, financial institutions would find it in their private interest to hold sufficient reserves in excess of requirements to protect themselves and to profit from settlement-day shortages.

Furthermore, existing provisions with respect to carrying forward reserve deficits, shifting vault cash to the Federal Reserve for immediate credit to reserve accounts, and other devices [1] could cushion individual institutions from a restrictive monetary policy but they could only postpone, not circumvent, the thrust of the policy.

Some bond dealers and financial institutions allegedly have had difficulty in mastering the intricacies of the money market under the new operating procedures and associated short-run Federal funds rate variability.

But surely their major problem is not interest rate variability in terms of the 1-day Federal funds rate but interest rate variability in

[1] For example, incurring required reserve deficits and paying the penalty the Federal Reserve imposes.

98-736 0 - 82 - 2

terms of longer term instruments where they risk substantial capital gains or losses.

Such institutions would be far better off if monetary growth rates were more stable, inflationary expectations were more stable, and interest rates on the average were more stable, whatever their level.

SUMMARY

The Federal Reserve could control monetary growth much more effectively than it has in the past if it would forget about interest rate variability in the short run and concentrate on keeping monetary growth within narrow noninflationary bounds: in the present context, an M_1 growth rate of approximately 3 percent.

The consequences of such a policy would be reduced interest rate variability and reduced inflation. Furthermore, instead of monetary growth contributing to the business cycle, it could have a stabilizing influence on the business cycle.

Such stability in monetary growth and reduced volatility in interest rates would reduce the level of real interest rates to some extent. This is the most that can be expected of monetary policy.

It would be a terrible policy to seek to expand monetary growth now to reduce real interest rates. Quite the opposite would result.

The best way out of the current dilemma is for the Federal Reserve to establish credibility by keeping monetary growth low and stable at a noninflationary level. Inflationary expectations will then come down and though real interest rates will reflect credit market conditions whatever their source, there won't be the problem of monetary policy having confused markets by repeatedly changing the available stock of money in which transactions are denominated.

The current credit crisis is not a failure of monetarism, but a Federal Reserve failure to design and use its instruments of monetary control effectively.

Thank you.

Representative WYLIE. Thank you very much, Professor Dewald, for a very interesting and excellent presentation.

It is something that I can look to with some reason to believe that it will be beneficial in our deliberations.

I think we will go in alphabetical order. Now, we will hear from Prof. Raymond E. Lombra, professor of economics at the Pennsylvania State University.

Professor Lombra.

STATEMENT OF RAYMOND E. LOMBRA, PROFESSOR OF ECONOMICS, PENNSYLVANIA STATE UNIVERSITY

Mr. LOMBRA. Thank you very much, Congressman Wylie.

The Federal Reserve has consistently succeeded in portraying the definition, measurement analysis, and control of monetary aggregates as akin to trying to solve the Rubik's cube blindfolded.

Focusing on the reality as opposed to the rhetoric, the question is, what if anything, does the Fed's conduct of monetary policy have to do with the volatility of monetary growth and the prevailing high level of nominal interest rates, particularly long term rates?

Presumably, concern about this issue stems from the belief that existing interest rate levels, if maintained, will abort the incipient recovery in economic activity.

To begin, most economists would argue that the distinction between nominal and real inflation adjusted rates is crucial for the issues being addressed by this subcommittee.

The reason is that recognition of such a distinction suggests that the high level of long term nominal rates reflects to a considerable degree the effects of the high inflation rates experienced in recent years and the public's expectation that the current deceleration of inflation will prove temporary.

Since I have yet to hear a policymaker, monetary or fiscal, advocate more inflation, and inflation has dropped dramatically, one might ask why this is the case.

Since 1970 Fed Chairmen Burns, Miller, and Volcker have testfied before this and other committees on numerous occasions about the need to reduce monetary growth. Regrettably, the record of the 1970's was not only highly correlated with such rhetoric. This fact alone, in my judgment, would lead one to believe that the announcement of a strong, coordinated anti-inflation effort would be quite insufficient to generate a significant downward revision in inflationary expectations, and therefore, a significant decline in nominal long term interest rates.

By the end of the 1970's the credibility of policymakers had depreciated well beyond the point necessary to generate such a fortuitous response. The implications of the credibility of any anti-inflation policy stance and the associated reduction in inflationary expectations and nominal interest rates was bound to come slowly as the public gradually gained confidence in the permanency of the change in policy.

Unfortunately, the actual conduct of monetary and fiscal policy over the past 2 years and the current outlook for fiscal policy have not yet provided the necessary reinforcement for the anti-inflation rhetoric.

The general perception among market participants appears to be that fiscal policy is out of control and will be stimulative, thus adding to inflationary pressures and continuing pressing on interest rates.

The anticipated effects of the fiscal situation on monetary policy appear, in general, to reflect two seemingly opposing views. One expects the Fed to be under unrelenting pressure to increase money growth further to accommodate—or monetize—the deficit.

Another view contends the Fed will hang tough and try to adhere to its plan for gradual deceleration of monetary growth. However, the low rate of monetary nourishment is expected by many to collide with the expansionary fiscal policy resulting in rising interest rates, falling real output, and the unseating of those elected and unelected officials who have tried to reverse the policies of the 1970's.

Since neither view supports the notion that a fundamental and lasting change in policymaking has occurred, both are consistent with the stickiness of long-term, nominal interest rates and the inflationary expectations which underlie them.

Simply put, the conduct of monetary policy and the budget impasse, along with such developments as the pending legislation to subsidize mortgages and various interpretations of the recent exchange between Congressman Reuss and Chairman Volcker, have all contributed to the persistence of pessimism regarding the Government's willingness and ability to pursue longer run policies consistent with stable, noninflationary growth of the economy.

Accordingly, there is little doubt that an increase in the trend rate of monetary growth would lead eventually to an increase in both short-term and long-term interest rates.

To ascertain whether a temporary increase from an unchanged trend would have a more salutary effect requires us to examine the causes and effects of short-run variability in monetary growth.

As to the causes, monetarists generally point to the volatility of reserve growth and the failure of the Fed to repair the faulty plumbing which links reserve growth to monetary growth.

More specifically, they emphasize the need for uniform, universal, and contemporaneous reserve requirements, a fundamental reform of the discount window, and a smooth growth path for total reserves or the monetary base.

Since virtually all the available professional work on monetary controls suggests these proposals would on balance improve the Fed's short-run control over monetary growth somewhat and it is within the Fed's power to implement many of the reforms without further legislation, monetarists understandably question the Fed's basic commitment to its monetary targets.

The Fed rejects the proposition that it is an important cause of short-run deviations of money growth from its trend or target. Research within the Fed on various issues associated with the measurement and interpretation of short-run movements in the monetary aggregates suggest that the noise, that is the random fluctuations contained in weekly and monthly money stock data is huge.

The policy implications of the large, erratic fluctuations are straightforward: 1 month's deviation of monetary growth from its established target should not and has not elicited a strong policy response; sizable deviations persisting for 2 to 3 months should and indeed have induced a policy response.

Believing that the major problems of monetary control have not been and are not now related in any important way to week to week and month to month fluctuations in money growth, I am convinced that the extensive wrangling over plumbing issues has served as a most unproductive distraction and discussions of monetary policy.

Research inside and outside of the Federal Reserve strongly suggests the central bank can essentially have its way with monetary growth over a 6- to 12-month period. Why such control has not been exerted is perhaps better addressed by political scientists rather than economists.

Turning to the effects of short-run fluctuations in money growth, monetarists contend that sizable short-run fluctuations in monetary growth and the attendant questions raised about the Fed's intentions have contributed to uncertainty in financial markets.

This in turn is alleged to have increased the risk premiums embedded in longer term rates and thus retarded the downward movement in long-term rates which would have otherwise accompanied the lowering of the inflation rate.

The Fed has typically downplayed the economic and financial effects of short-run fluctuations in money growth around some presumably unchanged and known trend. Apparently the Fed believes its announcement of monetary targets has credibility and deviations from the target will be discounted.

As discussed earlier, the difficulty with this position is that since the Fed has more often than not missed its targets, market participants cannot be sure what the emerging data implies about the underlying trend and the Fed's commitment to monetary control.

Hitting the targets consistently is one obvious remedy. Another complementary and salutary development would be to increase the Fed's public accountability. I have long found the Fed's arguments supporting the mysticism and secrecy surrounding monetary policy vacuous.

In general, the considerable social value of more information on such important matters is well known. How can the setting forth, revising, shift adjusting and vacillating among multiple monetary targets for several M's, along with the penchant for Fed Chairmen to talk more about fiscal policy than monetary policy, contribute to improved public understanding and confidence in monetary policy?

Since I, like many others, do not see how obfuscation serves the needs of the Nation here, I am not surprised that many believe the Fed employs such tactics to cover up its mistakes.

As to the actual effects of smaller versus larger fluctuations in money growth on interest rates, the issue is basically empirical. Table II of my prepared statement presents the results of some relevant empirical work. These simulation results which are subject to all the usual caveats associated with such work suggest the following:

First, neither a money demand approach which underlies the Fed's procedures or an inflationary expectations approach track short-term interest rates very well on a quarterly basis, suggesting our knowledge of the relevant relationships in the short run is subject to considerable uncertainty.

Second, the inflationary expectations approach consistently underpredicts short-term interest rates, suggesting the linkage between inflation, inflationary expectations, monetary policy and interest rates is not as tight in the short run as many have claimed.

Third, if the errors are averaged over the four and five quarter horizons, respectively, the money-demand approach appears superior, suggesting that over the course of a year the level of short-term rates is decisively influenced by the public's money demands relative to the Fed's provision of money supply.

A key implication of the latter inference is that the current high level of short-term rates reflects, in part, the comparative strength in money demand and the Fed's effort, however, modest, to be less accommodative.

I should add, a number of recent papers confirm the fact that financial market participants now behave as if they believe the Fed will, in fact, move to counteract an unexpected deviation of the money stock from expected levels. This literature finds that over weekly, monthly, and quarterly time horizons an unexpected rise in the money stock, for example, leads to sympathetic rises in interest rates, particularly short-term rates. Perhaps the most important result bearing on this hearing is that the evidence does not support the conjecture that a rise in monetary growth will produce a sustained fall in interest rates.

In sum, more volatile monetary growth and interest rates, and the associated uncertainty and questions about the Fed's intentions, have probably contributed to the stickiness of long-term rates. Furthermore, there is little evidence that a stepup in monetary growth by itself, even

if temporary, would produce the much-desired lasting decline in long-term interest rates.

I would like to turn briefly to some reflections on an important current policy issue. One might reasonably infer, even without Chairman Volcker's confirmation, that the Fed has to this point this year found money growth acceptable on balance. Viewed in historical perspective, I'm not inclined to be too critical of this position.

In table III of my prepared statement, money growth rates surrounding postwar recession troughs and the first quarter of 1982 are presented. The historical tendency for money growth to fall prior to and during recession troughs, and thus exacerbate, rather than alleviate, cyclical downturns is well documented. This time around, reflecting in part the Fed's improved procedures, money growth has been more ample, a not-unwelcome development.

Looking ahead, the problem to be avoided is the acceleration of money growth which has usually accompanied an unduly reinforced, economic recovery. Having seldom been able to engineer a "soft-landing" of the economy, one should not be too optimistic about the possibility of policymakers nurturing a controlled, gradual, sustained recovery.

The above concern conditions my reaction to the Fed's implicit, if not explicit, contention that an unexpected and perhaps recession-induced increase in the public's money demand, or more generally, demand for liquidity, as revealed through the growth of savings deposits and NOW accounts, both explains and warrants the advent and continuation of a relatively high rate of monetary growth.

Although there is probably something to this argument, it does sound quite bizarre against the background of the Fed's refrain last year. It was then argued that below-target M_1 growth was quite acceptable because regulatory changes and financial innovation had combined to reduce the public's demand for money, increasing velocity and reducing the growth of money necessary to finance GNP.

One can only speculate on why or how the effects of such previously powerful trends have allegedly been reversed so suddenly. Intentional or not, alluding to frequent, sudden, unexpected shifts in money demand, for which the evidence is quite circumstantial, and thus our knowledge quite imperfect, to explain the failure to achieve monetary targets over time, does not enhance the public's understanding of or confidence in monetary policy.

In conclusion, economic analysis suggests there are obvious limits to what the Fed can accomplish on its own, especially over the short run. Thus, if fiscal policy remains out of control, the degree of improvement the Fed can itself foster in financial markets and the economy will be considerably diminished.

Moreover, although the costs of disinflation, as many expected, are providing nontrivial, an attempt to lower interest rates by increasing monetary growth further is, in my judgment, ultimately doomed to failure.

Thank you.

Representative WYLIE. Thank you very much, Mr. Lombra, for an excellent statement and for your contribution.

[The prepared statement of Mr. Lombra follows:]

Prepared Statement of Raymond E. Lombra*

FLUCTUATIONS IN MONEY GROWTH AND INTEREST RATES:
IS THE FED THE VILLIAN?

I. INTRODUCTION

The Federal Reserve is a beleaguered institution. The considerable volatility of interest rates and money growth over the past 30 months have led monetarists to argue that the changes in monetary control procedures announced in October 1979 represented more form than substance. Nonmonetarists, presumably looking at the same facts, conclude that monetarism has been tried, shown to be a failure, and call for an immediate easing of policy--i.e., higher money growth and, allegedly, lower interest rates. Even foreign central banks, normally reluctant to criticize brethren, have publicly lectured the Federal Reserve on the disruptive effects purportedly generated by its policies.

Simply put, widely disparate and seemingly inconsistent criticisms of the Federal Reserve (the Fed) and advice on how to improve its performance are not in short supply in financial, academic, or governmental circles. Given the apparent disagreements among the experts, the Fed has consistently succeeded in portraying the definition, measurement, analysis, and control of monetary aggregates as akin to trying to solve the Rubik's Cube blindfolded.

Focusing on the reality, as opposed to the rhetoric, it is certainly true that a logical positivist looking at the relevant monetary data would not identify October 1979 as the starting date for an improvement in monetary control; in fact, the apparent increase in the volatility of M1 growth over the past

---

*Professor of Economics, The Pennsylvania State University.

30 months might well lead an empiricist to conclude that October 1979 marked the abrogation of monetary control! The question Senator Jepsen asked us to focus on is what, if anything, does the Fed's conduct of monetary policy have to do with the volatility of money growth and the prevailing "high" level of nominal interest rates, particularly long-term rates. Presumably, concern about this issue stems from the belief that existing interest rate levels, if maintained, will abort the incipient recovery in economic activity.

II. WHY HAVE LONG-TERM NOMINAL INTEREST RATES REMAINED "HIGH"?

Nearly all economists would agree that logically prior to any attempt to answer this difficult question is the need to address what is meant by "high interest rates." Two closely-related perceptions dominate current discussions of interest rates; it is asserted that interest rates are high relative to the current inflation rate and/or that interest rates are high relative to historical experience. Any interest rate chart (and your constitutents) will confirm that fact that over the past two years nominal long-term interest rates have pushed through, and, as of this date, remain relatively close to historical peaks. Most economists, however, would argue that borrowing and lending (saving and investing) decisions by households and firms are mainly driven by real, after-tax, interest rates--that is, nominal rates minus an adjustment for taxes and inflationary expectations--rather than nominal interest rates. Therefore, the distinction between nominal and real rates is crucial for the issues being addressed by this Committee.

The failure to draw the distinction and make the appropriate adjustments leads many to argue that monetary policy has been and is now very restrictive. Alternatively, those who make such adjustments usually argue that the level of

nominal rates primarily reflects the effects of the high inflation rates experienced in recent years and the public's expectation that the current deceleration of inflation will prove temporary on borrowers and lenders (the demanders and suppliers of funds).[1] The implication, according to the latter view, is that nominal interest rates are "high" because monetary and fiscal policy (particularly monetary policy) have been quite stimulative (i.e., inflationary) over the last decade, on balance, and are expected to remain so. This last aspect of the inflation-interest rate-policy nexus is important and requires elaboration.

The Rhetoric vs. The Record: The Flight From vs. The Fight For Credibility

I have yet to hear a policymaker, monetary of fiscal, advocate more inflation. Central bankers, in particular, have spoken repeatedly of the dangers associated with a rising inflation rate and of the pressing need to design and implement "appropriate" policies. More specifically, since 1970, Fed

[1] The major reasons for the correlation between inflation and nominal interest rates can be illustrated through a simple example. Suppose the corporate bond rate is 9 percent and the current and expected rate of inflation is 7 percent. If we ignore taxes, this means that the expected real cost of borrowing to the corporation and real return to the lender is 2 percent. Now assume that the public observes the advent of a more expansionary monetary and fiscal policy and believes the net result will be an increase in the inflation rate to 10 percent. On the borrowing side of the market, if the corporate bond rate initially remains at 9 percent, the corporations who are contemplating borrowing will expect the real cost of funds to fall from 2 percent to minus 1 percent. Such a good deal should lead to a considerable increase in the demand for funds (supply of bonds), which will in turn put upward pressure on the nominal corporate bond rate. On the lending side of the market, the upward revision in inflationary expectations to 10 percent, and decline in the expected real return from 2 percent to minus 1 percent, will lead lenders to reduce their supply of funds (demand for bonds) in the market. The reduction in supply will also put upward pressure on the corporate bond rate. Thus, changes in inflationary expectations, in this case an increase, affect the behavior of borrowers and lenders who determine the supply and demand for funds, and cause nominal interest rates to change in the same direction.

Chairmen Burns, Miller, and Volcker have testified before this and other committees on numerous occasions about the need to reduce monetary growth. Regrettably, the record of the 1970s was not highly correlated with such rhetoric. This fact alone, in my judgment, would lead one to believe that the announcement of a strong, coordinated anti-inflation effort would be quite insufficient to generate a significant downward revision in inflationary expectations, and therefore, a significant decline in nominal interest rates. By the end of the 1970s the credibility of policymakers had depreciated well beyond the point necessary to generate such a desirable response. The implication is that the credibility of any anti-inflation policy stance, and the associated reduction in inflationary expectations and nominal interest rates, was bound to come slowly as the public gradually gained confidence in the permanency of the change in policy.[2] Although an initial deceleration in monetary growth, slowing of economic activity, and fall in the inflation rate would be important first steps, the past record of reversing direction and pursuing a more stimulative policy resulting in reflation was sure to limit the degree of improvement in the short to intermediate term (1-3 years).

Unfortunately, the actual conduct of monetary and fiscal policy over the past two years, and the current outlook for fiscal policy, have not yet provided the necessary reinforcement for the rhetoric. Shown in Table I are the growth rates of the various monetary aggregates in recent years. As shown, a deceleration in M1 growth through 1981 did occur, but has been reversed thus far in 1982. Further, the growth of the broader aggregates, M2 and M3, has been relatively constant, on average, over the past 4½ years.

---

[2]See the papers on "Anti-Inflation Policies and the Problem of Credibility," in the American Economic Review, Papers and Proceedings (May 1982), 77-91.

Table I

Monetary Aggregate Growth
(Percentage Changes)

Period	M1[1]	M2	M3
(Fourth Quarter to Fourth Quarter)			
1978	8.3	8.3	11.3
1979	7.5	8.4	9.8
1980	6.6	9.1	9.9
1981	2.3	9.4	11.4
1982[2]	6.7	9.7	9.6
(Annual Average to Annual Average)			
1978	8.2	8.8	11.8
1979	7.7	8.5	10.3
1980	5.9	8.3	9.3
1981	4.7	9.7	11.5

[1]Growth rates for 1980 and 1981 are adjusted for shifts to other checkable deposit accounts since the end of the preceding year.

[2]Growth through May at an annual rate.

Source: Federal Reserve

The caution and uncertainty generated by the monetary policy indicators have been severely aggravated by the large budget deficits projected for the current and succeeding fiscal years. The general perception among market participants appears to be that fiscal policy is out of control and will be stimulative, thus adding to inflationary pressures. This, along with the accompanying deficits, are widely expected to put upward pressure on interest rates, or, at

least, prevent large declines. The anticipated effects of the fiscal situation on monetary policy appear, in general, to reflect two seemingly opposing views. One expects the Fed to be under unrelenting pressure to increase money growth further to accommodate (or "monetize") the deficit and accompanying credit demands so as to moderate any upward pressure on interest rates and the "crowding out" of private spending. Another view contends the Fed will "hang tough" and try to adhere to its plan for a gradual deceleration in monetary growth. However, the low rate of monetary nourishment is expected by many to collide with the expansionary fiscal policy, resulting in rising interest rates, falling real output, and the unseating of those elected and unelected officials who have tried to reverse the policies of the 1970s.

Ironically, since neither view supports the notion that a fundamental and lasting change in policymaking has occurred, both are consistent with the stickiness of long-term nominal interest rates, and the inflationary expectations which underlie them. As expressed in the 1982 Economic Report of the President,

> Having repeatedly suffered sizable capital losses on their holdings of long-term bonds, investors will be unwilling to commit new funds to these markets unless they are compensated for the risk that the current commitment to overcome inflation might be abandoned. Without adequate compensation for this risk, individuals will continue to prefer to invest in short-lived rather than long-lived financial assets. While this preference may prevent investors from maximizing the expected return on their assets, it allows them to minimize the adverse effects of future increases in inflation and interest rates.
>
> Present concern about future monetary growth, inflation, and interest rates is related to the knowledge that the Federal budget will continue to show large deficits for the next several years. Financial investors fear that these deficits will cause either a sharp increase in interest rates--which would slow the recovery from recession--or an increase in monetary growth if the Federal Reserve attempts to hold interest rates down by adding reserves to the banking system through open market purchases of government securities.

> Interest rates that are considerably higher than the current rate of inflation can have an adverse effect on investment and real economic growth. The level of long-term interest rates at the end of 1981 did not reflect investor willingness to believe that inflation will decline over the next several years. The presumably large but unmeasurable premiums being demanded by investors constitute a major obstacle to achieving rising output and employment with falling inflation (p. 60).

Regrettably, the conduct of monetary policy thus far in 1982 and the budget impasse, along with the pending legislation to subsidize mortgages and various interpretations of the recent exchange between Congressman Reuss and Chairman Volcker, have all contributed to the persistence of pessimism regarding the government's willingness and ability to pursue longer run policies consistent with stable, noninflationary growth of the economy.

Against the background discussed above, there is little doubt that an increase in the trend rate of monetary growth would lead, over time, to an increase in both short-term and long-term interest rates.[3] Whether a temporary increase from an unchanged trend would have a similar effect is part of a more complicated set of issues relating to the causes and effects of short-run deviations of money growth from some underlying, and presumably discoverable trend.

Short-Run Variability of Monetary Growth: Causes and Effects

The increase in the short-run volatility of money (M1) growth (week-to-week, month-to-month, and quarter-to-quarter) over the past 2½ years requires no documentation. Explanations for these larger fluctuations, however, diverge

---

[3]For elaboration on this and related issues see the seminal study by Robert Weintraub, "Report on Federal Reserve Policy and Inflation, and High Interest Rates," Federal Reserve Policy and Inflation and High Interest Rates. U.S. Congress, House Committee on Banking and Currency, 93rd Congress, 1974: 31-76.

considerably. The Fed usually points to the "inherent instability" in the money stock series emanating from erratic (stochastic) shifts in money demand, difficulties associated with seasonal adjustment, and other technical problems. Monetarists generally point to the volatility of reserve growth and the failure of the Fed to repair the "faulty plumbing" which links reserve growth to money growth. More specifically, they emphasize the need for uniform, universal, and contemporaneous reserve requirements, a fundamental reform of the discount window; and a smooth growth path for total reserves or the monetary base. Since virtually all the available professional work on monetary control suggests these proposals would, on balance, improve the Fed's short-run control over monetary growth somewhat (the degree of improvement is controversial), and it is within the Fed's power to implement many of the reforms without further legislation, monetarists understandably question the Fed's basic commitment to its monetary targets.

The Fed rejects the proposition that it is an important cause of short-run deviations of money growth from its trend or target. A considerable volume of quality research has been done within the Fed--including that done in conjunction with several committees of outside experts--on various issues associated with the measurement and interpretation of short-run movements in the monetary aggregates. Simply put, there is overwhelming statistical evidence that the "noise" (i.e., the degree of random fluctuation) contained in weekly and monthly money stock data is huge. For example, current estimates place the standard deviation of monthly M1 growth rates resulting from transitory (irregular) variations and seasonal adjustment problems at 4.5 percent (measured at a seasonally adjusted annual rate).[4]

---

[4] D. Pierce and W. Cleveland, "Seasonal Adjustment Methods for the Monetary Aggregates," Federal Reserve Bulletin (December 1981), 875-887.

The policy implications of the large, erratic fluctuations are straightforward: one month's deviation of monetary growth from its established target should not and has not elicited a strong policy response; sizable deviations persisting for 2-3 months should and indeed have induced a policy response. (Whether that response has been strong enough is a separate issue to be discussed below.) The evidence and common sense suggests that large weekly and monthly fluctuations in money growth are inherent in our modern, complex, interdependent world. Without denying that the "plumbing" in the financial system could be improved to reduce the size of these fluctuations somewhat, there is little doubt that even with the suggested reforms, the aggregates would remain quite "noisy." The reason is a bit technical, but since it is often overlooked, it is worth reviewing briefly.

Consider the relationship among three key variables--the money stock, reserves, and the Federal funds rate. From early 1970 through October 1979, the Fed attempted to control monetary growth by pegging the funds rate in the short run at the level it thought was consistent with the monetary target. Reserves were supplied elastically through open market operations to peg the rate. Any disturbances (or shocks), such as an unexpected strengthening in the public's demand for money, would initially lead to a rise in both reserves and the money stock with no change in the funds rate. Thus, in this regime, shocks were absorbed by fluctuations in reserves and money.

In contrast, since 1979 the Fed has attempted to control money growth by pegging reserve growth. In this regime, a shock--for example, an unexpected strengthening in the public's demand for money--will put upward pressure on the funds rate (and other interest rates). The result is that the shock

will now be absorbed by fluctuations in interest rates and money. Therefore, given a particular path for reserves or the monetary base, transitory disturbances will continue to produce fluctuations in the money stock in the short run even with new "plumbing."[5]

Believing that the major problems of monetary control have not been, and are not now, related in any important way to week-to-week and month-to-month fluctuations in money growth, I am convinced that the extensive wrangling over "plumbing" issues has served as a most unproductive distraction in discussions of monetary policy. Research inside and outside the Fed strongly suggests the central bank can essentially "have its way" with money growth over a 6-12 month period.[6] Why such control has not been exerted is perhaps better addressed by political scientists rather than economists.

Effects of Short-Run Fluctuations in Money Growth

Relevant to the specific issues under examination at this hearing, monetarists contend that sizable short-run fluctuations in monetary growth, and the attendent questions raised about the Fed's intentions, have contributed to uncertainty in financial markets. This in turn is alleged to have increased

---

[5] A nautical analogy may help drive the point home. Picture one large barge towing two other barges: [Reserves] —— [Money] —— [Funds Rate] $\rightarrow$. The money and reserves barges will be importantly influenced over time by the slow-moving funds-rate barge. In the short run, however, especially if the tow lines (structural linkages) are long, elastic, and thus loose, other forces, such as the wind, current, and waves, will disturb (move around) the money and reserves barges. Now change the order (post-October 1979) and let the reserves barge do the pulling: [Funds Rate] —— [Money] —— [Reserves] $\rightarrow$. Other forces will now disturb the money and funds rate barges. However, by shortening and strengthening the tow cables or by more aggressively maneuvering his barge, the captain of the reserves barge can reduce the "wandering" of the other barges somewhat.

[6] See David Lindsey, et al., "Monetary Control Experience under the New Operating Procedures," in New Monetary Control Procedures, Board of Governors of the Federal Reserve System, February 1981; and James Johannes and Robert Rasche, "Can the Reserves Approach to Monetary Control Really Work?" Journal of Money, Credit and Banking (August 1981), 298-313.

the risk premiums embedded in longer-term rates and thus retarded the downward movement in long-term rates which would have otherwise accompanied the lowering of the inflation rate. Again, quoting from the 1982 Economic Report of the President,

> Expectations about future rates of money growth, like expectations of future inflation, are likely to be more divergent the greater the variability of past money growth. These expectations should converge more rapidly as the Federal Reserve improves its ability to control money growth. More precise control of money growth around the target path will reduce the difficulty of inferring from actual growth rates whether or not the announced targets are, in fact, a reliable indicator of future money growth. In such an environment, variations in money growth will reflect only random and short-lived deviations, which would have little effect on either short- or long-run expectations about monetary policy. But failure to achieve more precise monetary control, by impeding a rapid [downward] adjustment of [inflationary] expectations, would significantly raise the costs of reducing inflation [by holding up long-term interest rates and retarding economic growth]. Thus, the payoffs of greater precision could be quite large (pp. 60-61).

In evaluating the above argument, it is useful to start with a widely-accepted premise: in general, greater volatility of any major macroeconomic variable--e.g., interest rates, real output, prices, and the money stock--will not contribute to the type of stable environment conducive to effective and efficient decision-making and planning. Put more forcibly, we do know that more volatility in financial markets (i.e., in interest rates and/or the money stock) works in the direction of increasing risk and uncertainty, thus adversely affecting longer-term debt and equity markets (and wealth). As is often the case in economics, available empirical estimates of the costs of such volatility differ considerably.[7] Nonetheless, all would agree a more stable environment

---

[7] See, for example, R. Lombra and F. Struble, "Monetary Aggregate Targets and the Volatility of Interest Rates: A Taxonomic Discussion," Journal of Money, Credit and Banking (August 1979), 284-300; various papers in New Monetary Control Procedures, Board of Governors of the Federal Reserve System, February 1981; and A. Meltzer, "Money Growth in 1982," paper prepared for Federal Reserve academic consultants meeting, April 27, 1982.

is desirable.[8]

As you all know, the Fed has: (1) typically downplayed the economic and financial effects of short-run fluctuations in money growth around some presumably unchanged and known trend; and (2) usually argued that attempts to tighten control will increase volatility of at least short-term interest rates. The first part of the Fed's position is difficult to support. Apparently, the Fed believes that its announcement of monetary targets has credibility and deviations from the target will be "discounted." As discussed earlier, the difficulty with this position is that since the Fed has more often than not missed its targets, market participants cannot be sure what the emerging data implies about the underlying trend and the Fed's commitment to monetary control.

Hitting the targets consistently is one obvious remedy. Another complementary and salutary development would be to increase the Fed's public accountability. I have long found the Fed's arguments supporting the mysticism and secrecy surrounding monetary policy vacuous. In general, the considerable social value of more information on such important matters is well known.[9] How can the setting forth, revising, shift-adjusting, and vacillating among multiple monetary targets for several M's, along with the penchant for Fed Chairmen to talk more about fiscal policy than monetary policy, contribute to improved public understanding and confidence in monetary policy? The Bureau of Labor Statistics, and other government agencies, publish, discuss, and interpret data and comment on emerging developments on a regular basis;

---

[8]Whether it is attainable or not depends in part on one's assessment of the causes of short-run variability of money growth. The feasibility and desirability of alternative strategies are not independent of such considerations.

[9]On this and related issues, see J. O'Brien, "Estimating the Information Value of Immediate Disclosure of the FOMC Directive," Journal of Finance (December 1981), 1047-1061.

why not the Fed? Since I, like many others, do not see how obfuscation serves the needs of the nation here, I am not surprised that many believe the Fed employs such tactics to cover up its mistakes.

As for the second part of the Fed's position--the effect of smaller vs. larger fluctuations in money growth on interest rates--several strands of the relevant professional literature merit attention. The traditional literature views the determination of the level of interest rates--in, particular, short-term rates--and the effects of the money stock, in two alternative, but not necessarily mutually exclusive ways. One approach, encompassing the work discussed earlier, emphasizes the causal relationship running from money growth to inflationary expectations to nominal interest rates. Within this approach, increases in money growth may produce temporary and relatively small declines in short rates; but, such declines are quickly reversed by increases in interest rates above and beyond initial levels. The second approach views rates as being determined within a money supply-money demand framework, with demand playing an especially dominant role. Increases in money growth, within this approach, typically produce larger and more lasting declines in short-term rates.

Since the issue is basically empirical, Table II presents the results of some relevant work conducted by David Lindsey of the Fed's staff.[10] These simulation results, which are subject to all the usual caveats, cover the period since the October 1979 change in Fed procedures. The findings suggest the following: neither approach tracks short-term rates very well on a quarterly basis--both produce sizable forecasting errors--suggesting our

---

[10] See David Lindsey, "Recent Monetary Developments and Controversies," Brookings Papers on Economic Activity (1:1982), forthcoming, for full details. I would like to thank Dave Lindsey for providing the detailed data behind his Table 3.

Table II

Alternative Approaches to Explaining Short-Term Rates, 1980:I-1982:I
(Quarterly averages, percentage points)

Period	Money Demand Approach[1] (3 mo. Treasury Bill Rate)			Inflationary Expectations Approach[2] (4 mo. Commercial Paper Rate)		
	Actual	Predicted	Error	Actual	Predicted	Error
1980: I	13.35	11.01	2.34	14.49	8.92	5.57
II	9.65	18.74	-9.09	11.06	9.43	1.63
III	9.15	.30	8.85	9.65	7.07	2.58
IV	13.61	13.92	-0.31	15.02	7.48	7.54
1981: I	14.39	21.89	-7.5	15.06	8.07	6.99
II	14.91	8.75	6.16	15.93	6.89	9.04
III	15.05	10.04	5.01	16.60	7.79	8.81
IV	11.75	25.33	-13.58	13.02	6.63	6.39
1982: I	12.74	.11	12.63	13.47	5.30	8.27
Average 1980: I - 1980: IV	10.9	11.0	-0.1	12.5	8.2	4.3
Average 1981: I - 1982: I	13.8	13.2	0.6	14.8	6.9	7.9

[1]These results are from a dynamic simulation of a money demand function developed by T. Simpson and R. Porter ("Some Issues Involving the Definition and Interpretation of the Monetary Aggregates," in Controlling Monetary Aggregates III, Federal Reserve Bank of Boston Conference Series, No. 23, October 1980, 161-234) solved for the 3-month Treasury bill rate.

[2]These results are from a simulation of the interest rate equation developed by L. Anderson and K. Carlson ("The St. Louis Model Revisited," International Economic Review, June 1974, 305-327.

knowledge of the relevant relationships in the short run is subject to considerable uncertainty; the inflationary expectations approach consistently underpredicts short rates, suggesting the linkage between inflation, inflationary expectations, monetary policy and interest rates is not as tight in the short run as many have claimed; if the errors are averaged over 4 and 5 quarter horizons, respectively, the money demand-money supply approach appears superior, suggesting that over the course of a year the level of short-term rates is decisively influenced by the public's money demands relative to the Fed's provision of money supply. A key implication of the latter inference is that the current high level of short-term rates (which, of course, affects long-term rates) reflects, in part, the comparative strength in money demand and the Fed's effort (however modest) to be less accommodative.[11]

A number of recent papers confirm the fact that financial market participants, as revealed by their portfolio actions and the resulting movement in securities prices, now behave as if they believe the Fed will in fact move to counteract an unexpected deviation of the money stock from expected levels.[12] Briefly, this literature finds that over weekly, monthly, and quarterly time horizons an unexpected rise in the money stock, for example, leads to sympathetic

---

[11]Martin Feldstein has recently advanced the same argument, "Why Short-Term Interest Rates Are High," Wall Street Journal, June 8, 1982, p. 34.

[12]See, for example, F. Mishkin, "Monetary Policy and Long-Term Interest Rates: An Efficient Markets Approach," Journal of Monetary Economics (January 1981), 29-55; F. Mishkin, "Monetary Policy and Short-Term Interest Rates: An Efficient Markets-Rational Expectations Approach," Journal of Finance (March 1982), 63-72; T. Urich and P. Wachtel, "Market Response to the Weekly Money Supply Announcement in the 1970s," Journal of Finance (December 1981), 1063-1072; J. Grossman, "The Rationality of Money Supply Expectations and the Short-Run Response of Interest Rates to Monetary Surprises," Journal of Money, Credit and Banking (November 1981), 409-424; and V. Vance Roley, "Weekly Money Supply Announcements and the Volatility of Short-Term Interest Rates," Economic Review, Federal Reserve Bank of Kansas City (April 1982), 3-15.

rises in interest rates, particularly short-term rates.[13] Perhaps the most important result bearing on this hearing is that the evidence does not support the conjecture that a rise in monetary growth will produce a sustained fall in interest rates.

In sum, more volatile money growth and interest rates, and the associated uncertainty and questions about the Fed's intentions, have probably contributed to the stickiness of long-term interest rates. However, existing economic conditions, the previous behavior of policymakers, and the structural relations which link the relevant variables, all impart a degree of inevitability to such outcomes. Finally, there is little evidence that a step up in monetary (M1) growth by itself, even if temporary, would produce the much-desired lasting decline in long-term interest rates.

III. REFLECTIONS ON CURRENT ISSUES AND FINANCIAL CONDITIONS

With the monetary aggregates (M1 and M2) currently exceeding the target ranges, and the monthly average Federal funds rate fluctuating in a relatively narrow range over the past 5 months, one might reasonably infer, even without Chairman Volcker's confirmation, that the Fed has to this point this year found money growth (see Table I) acceptable, on balance. Viewed in historical perspective, I am not inclined to be too critical of this position.

In Table III money growth rates surrounding post-war recession troughs and the first quarter of 1982 are presented. The historical tendency for money growth to fall prior to and during recession troughs, and thus exacerbate, rather than alleviate, cyclical downturns is well documented. This time around,

---

[13] Of course, partitioning changes in the money stock into expected and unexpected components is a nontrivial empirical problem.

Table III

Money (M1) Growth Around Post-War Recession Troughs
(Percentage changes at seasonally adjusted annual rates)

Recession Trough	Growth One Quarter Before Trough	Growth in Trough Quarter	Growth One Quarter After Trough	Growth Two Quarters After Trough
1958: II	-0.3	4.5	4.1	5.0
1961: I	0.0	2.0	3.1	2.5
1970: IV	5.1	6.4	7.4	9.6
1975: I	4.8	3.1	6.3	7.6
1980: III	-3.1	14.8	11.5	4.7
1982: I[1]	5.8	10.8	4.0[e]	?
Memo: Average Before October 1979 Change in Fed Control Procedures	2.4	4.0	5.2	6.2

[1]Unofficial; subsequent data may well place the trough in a later quarter.

e = estimated

Source: Group IV Investors' Economic Strategy, Inc.

reflecting in part the Fed's improved procedures, money growth has been more ample--a not unwelcome development. Looking ahead, the problem to be avoided is the acceleration of money growth which has usually accompanied, and unduly reinforced, economic recovery. Having seldom been able to engineer a "soft-landing" of the economy, one should not be too optimistic about the possibility of policymakers nurturing a controlled, gradual, sustained recovery.

The above concern conditions my reaction to the Fed's implicit, if not explicit, contention that an unexpected, and perhaps recession-induced increase

in the public's money demand, or more generally, demand for liquidity, as revealed through the growth of savings deposits and NOW accounts (embedded in the "other checkable deposit" component of M1), both explains and warrants the advent and continuation of a relatively high rate of monetary growth. Although there is probably something to this argument, it does sound quite peculiar against the background of the Fed's refrain last year; it was then argued that below-target M1 growth was quite acceptable because regulatory changes and financial innovation had combined to reduce the public's demand for money--increasing velocity and reducing the growth of money necessary to finance a given level of GNP. One can only speculate on why or how the effects of such previously powerful trends have allegedly been reversed so suddenly. Intentional or not, alluding to frequent, sudden, unexpected shifts in money demand, for which the evidence is quite circumstantial, and thus our knowledge quite imperfect, to explain the failure to achieve monetary targets over time, does not enhance the public's understanding of or confidence in monetary policy.

The Level of Real Interest Rates

No discussion of monetary policy and current financial conditions would be complete without some comments on the relatively high level of real (inflation-adjusted) interest rates. Historically, when nominal market interest rates rose above artificial, government-imposed ceilings, such as those mandated by Regulation Q and usury laws, the availability of funds to various types of borrowers was severely restricted. Such credit rationing, which was effected through the tightening of various nonprice terms on loans (e.g., the loan-to-value ratio, the term to maturity, and collateral requirements),

reflected the behavior of financial intermediaries operating on the supply, or lending, side of the market.

Over time, with the phasing out of Regulation Q, usury ceilings, and other artifical restraints, and continuing financial innovation, money and credit have increasingly (if not entirely) been rationed by the level and movement in interest rates (prices), rather than by constraints on availability (quantities). More directly, the degree of restrictiveness associated with particular policy actions now is mainly a function of the limiting effects of rising real interest rates on demand, as opposed to being a function, at least in part, of availability effects originating on the supply side in response to rising nominal interest rates.

From a policy perspective, it is clear that how much spending is choked off by any given rise in interest rates is a function of the responsiveness of credit demands, and thus spending, to changes in real rates. In general, the less responsive (more inelastic) are credit demands, the higher interest rates must rise to achieve a slowing of aggregate demand. Taken together, the diminished role of availability effects, and research which suggests that credit demands are fairly inelastic in the short run, may help to explain why real rates have had to move higher and remain high longer than historical experience alone would suggest. One additional implication is that since we are to some extent in "uncharted water," a certain degree of caution and concern are prudent.[14]

---

[14] See Albert Wojnilower, "The Central Role of Credit Crunches in Recent Financial History," Brookings Papers on Economic Activity (2:1980), 277-326.

IV. SUMMING UP

William Martin, a former Fed Chairman, once characterized the Fed as akin to someone who removes the punch bowl just as the party gets going. My own characterization is much closer to that coined by Edward Kane: "The Fed has come to function like a chaperone at a fraternity party. It legitimatizes the process without changing it very much."[15] Unfortunately, even if one leaves aside the pessimism such an analogy generates, economic analysis suggests there are obvious limits to what the Fed can accomplish on its own, especially over the short run. Thus, if fiscal policy remains out of control, the degree of improvement the Fed can itself foster in financial markets and the economy will be considerably diminished. Nonetheless, although the costs of disinflation, as many expected, are proving nontrivial, an attempt to lower interest rates by increasing monetary growth further, is, in my judgment, ultimately doomed to failure.

---

[15] Edward Kane, "External Pressure and the Operations of the Fed," in The Political Economy of Domestic and International Monetary Relations, R. Lombra and W. Witte, eds. Ames: Iowa State University Press, 1982.

Representative WYLIE. Now I would like to recognize Professor Rasche. Glad to have you here this morning, Professor Rasche, and also pleased to have the opportunity to become better acquainted with you last year at Professor Dewald's symposium on monetary policy. Professor Rasche is a professor of economics at Michigan State University.

You may proceed at your own speed.

STATEMENT OF ROBERT H. RASCHE, PROFESSOR OF ECONOMICS, MICHIGAN STATE UNIVERSITY

Mr. RASCHE. Thank you, Congressman Wylie.

The question of whether or not the Federal Reserve can control monetary growth is possibly the most overdiscussed question of the past decade in the area of monetary economics. However, in spite of the extensive discussion, the issue apparently cannot be successfully buried. Two and a half years after the Federal Reserve announced a major reorientation in the tactics of open market operations, professional economists, financial market participants, and members of congressional oversight committees appear no less certain than they were under the old procedures about the technical and/or desirable limits to monetary control.

ESTIMATED LIMITS TO MONETARY CONTROL UNDER CURRENT PROCEDURES AND INSTITUTIONS

Is monetary control technically feasible? This is probably the wrong question, or at least an uninteresting question to ask, since exact day-to-day, week-to-week, or month-to-month monetary control is not feasible under the present institutional arrangements in the United States, and unlikely to be feasible under a wide range of alternative structures. A more appropriate and more interesting question is, what limit exists to the accuracy of monetary control, and can the accuracy be improved with different institution arrangements? Once this limit has been assessed, the question of the desirability of controlling money growth to the technical limit can be addressed.

The question of the technical limit to the control of monetary growth can be assessed by considering the information available in the Federal Reserve staff study on the New Monetary Control Procedures, published to February 1981. By using this reference point, we presumably will minimize any obfuscation of the issues caused by controversies between the Federal Reserve and its critics. In particular, I would like to focus on information taken from the study by David Lindsey and others: "Monetary Control Under the New Operating Procedures."

Two important conclusions can be extracted from that study. The first is that based upon the forecasting techniques developed and applied by the staff of the Board of Governors, it appears reasonable that attempts to control M_1, formerly M_{1B}, using the procedures implemented on October 6, 1979, generally can keep the money stock within a range of plus 1.4 percent of the target path on a monthly average basis. This inference is derived from table 6 in Lindsey and others which reports a root-mean-squared forecast error of 8.2 percent at an-

nualized rates for the Board of Governors staff econometric money market model over the 1979–80 period. The range around the target path is derived as two times the root-mean-squared forecast error at monthly rates.

It is possible that the technical limit of the present procedures on a monthly basis is even lower than this. Smaller numbers are reported in other tables of this study; however table 6 is apparently regarded by the Board's staff as the most representative of the performance of their forecasting techniques.

The second conclusion, reached in this study is even more important for the issue of monetary control, yet it has not received the attention that it deserves. The authors note:

> **The Board of Governors' model's quarterly statistics for M_{1A} and M_{1B} show a more sizable improvement reflecting essentially no systematic tendency for errors to run on the same side from one month to the next. If the monthly errors are serially uncorrelated, the quarterly variability would be reduced to 19 percent of the month variability—a result that is achieved exactly for the Board's monthly model predictions of M_{1B} given actual nonborrowed reserves.[1]**

The conclusion that under the forecasting techniques devised by the staff of the Board of Governors, money growth errors would not persist under the current operating procedures is extremely important. It implies that the technical limit to monetary control on a quarterly average basis is a range of plus 0.8 percent around the target path and on an annual average basis, it is a range of plus 0.4 percent around the target path. Such ranges are very small relative to historical experience both before and after October 6, 1979.

Alternative forecasting techniques developed by other researchers have demonstrated some other properties. There is little doubt that the money stock can be controlled on an annual average basis within a very small range under current institutional arrangements. Furthermore, the Federal Reserve and its critics are agreed that changes such as contemporaneous reserve requirements, uniform reserve requirements and a more flexible administration of the discount window would further improve the technical limits to monetary control.

EXPERIENCE UNDER THE NEW OPERATING PROCEDURES: INCONSISTENCIES BETWEEN POTENTIAL AND EXPERIENCE

Why, if it appears technically feasible to achieve this kind of precision of monetary control, does the discussion of problems of monetary control persist? Experience clearly has not lived up to this technical potential. The evidence of the past 2½ years has been that money growth over quarterly or even semiannual periods has fluctuated considerably and high or low deviations have persisted. These results are not because of a technical inability to control the money stock within a tight range, but rather because of conscious decisions by the FOMC to tolerate persistent deviations from an average growth path of the money stock.

Indeed, in the paper by Tinsley and others in the staff studies on the new operating procedures, it is estimated that the goal of the FOMC during 1980 was to try to eliminate only about one-third of any observed deviation of money from the 1-year targeted path during the

[1] See Lindsey and others, pp. 62–63.

course of the following 1-month period. Under this self-imposed constraint on the new central procedures, the feasible limits to the range of money stock variation around a targeted path are increased by about 22 percent on a month-to-month basis and by about 55 percent on a quarter-to-quarter basis from those cited above.

Thus, the sharp attenuation of money stock variability that is characteristic of the results reported by Lindsey and others as averages are taken over longer horizons is substantially offset under the present implementation of monetary control. The stated rationale for the acceptance of such persistent deviations is that, based on the econometric studies of the Board's staff, elimination of these persistent deviations can only be accomplished by tolerating much wider short-run fluctuations in money market interest rates, with little to be gained in terms of influencing the path of economic activity.

Several comments on this position are warranted. First, there are a number of reasons that suggest that the implications of this particular econometric model should be treated with caution. An extensive review of that model was presented by Prof. Richard Anderson of Ohio State and myself at a recent A.E.I. Conference on "Current Issues in the Conduct of U.S. Monetary Policy." Second, the stated concern about interest rate fluctuations is at odds with the persistence of the lagged reserve requirement structure. Published analysis, by members of the staff of the Board of Governors, suggests that lagged reserve requirements can increase the variability of both interest rates and the money stock in response to shocks to money demand. Third, there is nothing in this, or any other econometric model of money market behavior with which I am familiar, to capture the impact of policy credibility or incredibility problems.

SOME COSTS OF HIGHLY VARIABLE MONETARY GROWTH RATES

The question that is frequently asked is why interest rates currently remain so high? How do interest rates respond to trends in monetary growth and deviations from such trends?

After a decade of promises by the Federal Reserve that monetary growth will be reduced to reduce the inflation rate, only to experience ever higher rates of monetary growth as the economy recovers from recession, financial market participants and others are justifiably skeptical that recently observed reductions in inflation are a permanent feature of our economy. Such skepticism is evidenced almost daily in the press. The continuation of persistent high and low deviations of money from targeted paths makes it very difficult to discern the long-run direction in which the Federal Reserve is going.

Sustained increases in money growth rates in the decade of the 1970's with the accompanying acceleration of inflation rates brought us the high interest rates that we presently observe. A permanent return to a regime of lower monetary growth and lower inflation rates will bring us lower interest rates. The problem at hand is to convince the actors in the financial markets of our economic system that the recently observed reductions in inflation are permanent, and not just another of the temporary dips such as were observed in 1970 and 1975.

The Federal Reserve has repeatedly and correctly emphasized that there is a very high noise-to-signal ratio in very short term money stock data, such as week-to-week or month-to-month numbers. What generally is not acknowledged is that the persistence of monetary deviations from targeted paths that is permitted and accepted under the current control procedures substantially increases the noise-to-signal ratio over more intermediate term horizons such as quarter to quarter or half year to half year as indicated above.

The highly variable monetary growth rates and persistent deviations from target paths that we continually observe make it difficult if not impossible to discern how well the Federal Reserve will perform relative to its stated ideal. Uncertainty over future Federal budget developments and the financing environment within which the Federal Reserve will have to operate over the next several years further clouds the picture. Past experience has demonstrated that betting with the Government and the Federal Reserve tip sheet on future inflation is a consistent loser. The major difficulty in reducing interest rates is to restore confidence that we have a persistent policy of reducing inflation. Any persistence in current policy is difficult if not impossible to discern with the degree of variability in monetary growth that we currently observe.

Representative WYLIE. Thank you very much, Professor Rasche, for another excellent statement. As a matter of fact, those were three outstanding statements. I compliment each and every one of you for them. I'm just very sorry that there aren't more members of the Joint Economic Committee here this morning. We are in session, or the House is in session at this moment, which wasn't anticipated when you were invited to be here, on the urgence of the metal appropriations bill and has a lot of volatile issues in it. Some of the players who would be here at the Joint Economic Committee also have a stake in what's going on over there, but we are pleased to have you here this morning and maybe some of them will come in before we finish the questioning.

Professor Dewald, in your statement you categorize the administration as among the elasticity optimists for believing that savers will supply even more savings, as needed, to finance Federal deficits in response to relatively small increases in interest rates. I thought that was very nicely stated as I heard you say it.

You made two very strong statements in your statement: One, the answer to the question as to whether the Federal Reserve is contributing to high interest rates is an emphatic no, and that's about where I have come out, I might say. You say keeping monetary growth low does not contribute to high interest rates; and second, that keeping money growth within too narrow a path does not contribute to interest rate volatility.

Now, I understand the first statement and would say that I associate myself with that, as far as long-term rates are concerned. What about short-term rates?

Mr. DEWALD. As I mention in my statement, low monetary growth would in time bring low not high interest rates, including short rates. Regarding the volatility question, I think that if you look at the record, the Federal funds rate, transaction to transaction, is more variable today than it was before October 6, 1979. But I don't think that kind of variability is really an important factor as far as markets are

concerned. I think the capital position of financial institutions is affected by variability in terms of longer term instruments. Treasury bills are, in a sense, a comparatively long instrument. It's very clear that the sort of persistent deviations of monetary growth from targets over 6 months or longer, the kind of thing that we've just experienced in this past 6 months, has been associated with a comparable variation in interest rates in the same direction as the deviation of monetary growth from a noninflationary trend.

And so I think if the Federal Reserve were more successful in keeping monetary growth stable over comparatively short periods of time, 1, 2, 3 months, not permitting these persistent deviations to get into the system, I think that interest rates would be much less volatile than they have been.

In fact, it's interesting if you think what happens Friday afternoon in New York. Apparently, every bond dealer sits around waiting for the teletype to come in reporting what the monetary growth was the previous week, a week ago. Why are they so interested in those data? You know, the Federal Reserve would like us to believe it's a lot of noise, that bond dealers shouldn't pay any attention to it. But they do pay attention and I think they profit from it, because if it's true that the Federal Reserve doesn't have a control procedure that offsets deviations in the past, if there's a big blip in monetary growth, it stays in the system persistently and they are responding to that blip and profiting from it. If the Federal Reserve had a different control procedure so that they offset errors in the past, the bond dealers could go play tennis on Friday afternoon.

Representative WYLIE. Would you like to respond to that, Professor Lombra? What I'm getting at here is not so much the long term, and not so much the volatility in the long term, but the fact that many economists say that rates are high now because the money growth is low. We have actually had economists before this panel who say that. Now, of course, Mr. Volcker takes a different position. He would be expected to take a position. I do, too. And I was just asking about you.

Mr. LOMBRA. I would like to make two points, Congressman. One is that it was absolutely inevitable, to my mind, that when the Fed changed procedures, short term interest rates were going to vary more. Under the old procedures—let's treat all short term interest rates as sort of the constellation of short-term interest rates, as if it was one interest rate. I think it's a simpler way to view this.

Under the old procedures, what the Fed did in the short run was peg the Federal funds rates and all other closely related rates stayed pretty close to the funds rate and money growth moved all over the place. Now, the Fed, I think, has made an increased effort to try to control money growth in the short run. Whether it's strong enough or not is a separate issue, but they've made an increased effort and that was inevitably going to lead to more fluctuations, if you will, in the prices in financial markets of short-term instruments, and that has occurred and there is nothing surprising about that. We could argue about whether it has been larger or smaller than people anticipated. So, I think that is one issue.

As to the level of short term interest rates, to my mind the level of short term rates, as I said in my statement, does reflect the interaction between the public's money demand and the Fed's money supply and

the transition to a lower money growth rate and lower inflation rate is, in the short run, going to involve some rise in short term interest rates, and we've seen that over the last 2½ years.

Interest rates are now lower than they were before. They aren't rising any more. They're falling. Hopefully, we've passed through the period, the transition period that we were going to have to bear.

Representative WYLIE. You think we have? Have interest rates peaked? That was one of the questions I asked.

Mr. LOMBRA. Peaked in the near term. What happens from here on out is still dependent, in an important way, on the Fed's monetary policy. They could pursue policies from here on out that will help encourage declines in short rates, or they can pursue policies which will raise short rates and they could decide that this morning. So nothing is ever in the bag with regard to interest rates and monetary policy. The Fed can—and we don't learn about it for a very long time, which is another thing they talked about. But I think the level of short-term interest rates is influenced by the Fed's monetary procedures and policies in the short run, and the fact that they are high now is part of—relative to historical experiences, is part of the transition. But we shouldn't lose sight of the fact that rates are now lower than they were at their peaks at 21.5 percent, say, for the prime rate. It's at 16½. We'd like more progress, but that's progress.

Representative WYLIE. Professor Rasche, there's a slight area of disagreement there, I think.

Mr. RASCHE. I guess I would like to reinforce some of the things that have been said, and perhaps disagree with some of the things that have been said. First of all, clearly short-term interest rates have peaked and have come down. That's the response we've seen in this cycle——

Representative WYLIE. You think they've peaked?

Mr. RASCHE. Well, since a year ago. Interest rates—last year short-term interest rates came down. They came down last summer and early fall, they leveled out and rose late last year and early this year, now they've come down again.

Representative WYLIE. But Citibank increased its rates day before yesterday.

Mr. RASCHE. The prime rate tends to be a lot stickier than everything else, but if you look at commercial paper rate, if you look at the Treasury bill rates, which move a lot more from day to day and are perhaps on a day to day basis or month to month basis more reflective of market forces, you get that kind of trend. That's the normal kind of phenomena. I think there's a popular tendency to identify interest rate cycles with business cycles, as if the two were coincident; that interest rates peak when the economy peaks and they bottom out when the economy peaks.

I think as far as short-term interest rates are concerned, if you examine the data you will find in past business cycles that that has not been, in fact, the case that interest rates have stayed high beyond the peak, the business cycle peak, the recognized business cycle peak: have fallen during recessions and continue to fall after business cycle troughs.

So if things go as far as past behavior is concerned, there is some expectation that if the economy is bottoming out at the present time,

which I believe it is, that we would still see in the normal course of events some further decline in interest rates. But they have declined substantially. They have perhaps not declined as much as we would like, but I think we also have to realize that in the recent past there has been an incredible amount of short-term demand for credit. There are a lot of firms out there scrambling to finance their activities in the market, and that they have been basically precluded from financing long term.

Representative WYLIE. Do I interpret your statement, correctly, Professor Lombra, when I think you are blaming the Fed and their monetary policy a little more for the high interest rate than you are Congress for its fiscal policy?

How important is reducing the Federal deficit to bringing down interest rates and keeping them down?

Mr. LOMBRA. I think we have to distinguish between long and short rates.

"Blaming" isn't the word I quite used for short-term rates regarding the Federal Reserve. I think a rise in short-term interest rates was necessary in the transition to get monetary growth under control. Whether it is now under control or not is still an open question.

I think the Federal deficit has—and there are different views of what its impact is going to be on the economy—influenced, in an important way, the relative stickiness of long-term interest rates.

As I pointed out, it's either because people believe the deficit itself will be inflationary and add to credit demands and/or they believe the deficit will bring pressure to bear on monetary policymakers to raise monetary growth and for us to get back on what Dr. Weintraub has called a money-supply rollercoaster again.

The optimists would, I suppose, argue that the Fed will hang tough, and I really believe what Paul Volcker says.

But even those who argue that, must worry that if fiscal policy stays as expansionary as it appears it will be over the next 3 or 4 years, that that will collide with monetary policy at some point, keep interest rates high, and may lead, in the political arena, to an abandonment of the support the Federal Reserve has enjoyed in some quarters and the removal, both in fiscal and monetary circles, of policymakers who support such policies.

Chairman Volcker's term is up, I believe, in August of 1983. And nothing precludes the appointment of somebody with a very different set of views about how monetary policy ought to be conducted.

If you are managing a bond portfolio, as Professor Rasche said, you have lost a lot of money in the last 2 to 3 years, especially, if you've kind of taken what the Federal Reserve and the Congress had said literally about what's going to happen to inflation.

So, a certain amount of skepticism and uncertainty is natural. And I don't think there's anything the Federal Reserve can do other than through its actions to change that—and the Congress as well.

Representative WYLIE. Professor Dewald. I emphasize the word "how"—how important is reducing the Federal deficit to reducing interest rates?

Mr. DEWALD. I think it's important, but I don't think it's a major factor. Partly the answer depends on what the response of the monetary authority is to the deficit. It's very clear, in the 1970's, as a

decade, the Federal Reserve bought $60 billion worth of Federal Government securities, which doubled its portfolio.

And as I indicated, it's no accident that the price level doubled in that period, too. Monetary growth accelerated. There was a link between budget deficits and monetary growth and a link between inflation and the interest rates that followed that.

But this is, in a way, a new experience. What is prospective for the United States in terms of the budget deficit, I suspect isn't going to mean much in terms of interest rates.

In part, even though a $100 billion deficit, give or take $20 billion, is enormous, if it's true that there's a built in, expected inflation rate of 10 percent, that is built into interest rates, as may well be the case, the inflation-adjusted budget deficit, since there's a trillion dollars of Federal Government debt out there, more or less, the inflation-adjusted deficit is zero.

The magnitude of the deficit, inflation adjusted with 10 percent inflation, is zero. What's the impact of that on private capital markets? It's zero.

So, I don't believe that we're in a situation where this budget deficit necessarily has to have a big impact on real interest rates. I think that the problem today is that the public just doesn't believe that the Federal Reserve will keep monetary growth at a noninflationary level and expected inflation is just a lot higher than the actual inflation of the economy. They expect it to come back.

If you look at Chairman Volcker's testimony here yesterday—according to the New York Times at least—he suggested that above-target deviations in monetary growth will be tolerated. How does the market respond to that?

Well, if they've got any sense, they expect the consequence will be inflation and higher interest rates.

Representative WYLIE. My time has expired, and Congressman Richmond wants to ask some questions.

I think the public is not all that aware of what the Federal Reserve does or doesn't do, and its impact on the economy. I would respectfully submit. I think generally the public feels like a huge deficit and the financing of the deficit could have an impact on it.

Congressman Richmond.

Representative RICHMOND. Thank you. Congressman Wylie.

Gentlemen, we've had a whole series of hearings on this problem. They get extremely repetitive, as you might well imagine.

Let us make you three gentlemen the three deciding factors. One is the Chairman of the Board of the Federal Reserve. The other is the Secretary of the Treasury. And the other is the Chairman of the President's Council of Economic Advisers.

We are confronted now with:

The problem of lack of confidence in the investor community; right?

Interest rates that are so high that it makes modernization of our industry almost impossible; right?

A very high Federal deficit, which, in all probability, will be much higher because everyone seems to be overestimating certain income through taxes. We know that we're in the middle of a much more serious recession than people would have us believe, and therefore I

don't believe the tax revenues are going to come anywhere near where people are expecting.

So, I don't look for a $100 billion deficit; I look for about a $160 billion deficit, which effectively will sop up all of American savings this year because American savings are only $200 billion.

So, here you have a bunch of facts which I think we can all agree on. And I would say the Federal Reserve is handling itself in a reasonable, sound, practical fashion.

You listened to Chairman Volcker yesterday. I got the feeling he was doing the best he could.

Now, what are we going to do to get the American economy back on the track, provide money for the basic industry to retool, reduce interest rates—well, when I say "provide money for basic industry to retool," what are we going to do to reduce interest rates? Isn't that what we're all here about?

Mr. DEWALD. Yes, sir.

Representative RICHMOND. We all have the same interests, Republicans, Democrats, President Reagan, and Chairman Volcker, and Murray Weidenbaum, Tip O'Neill, and Howard Baker. Everyone in Goverment wants to get the economy back on the track, wants to get out of this recession, wants the American people to be a little happier, wants to reduce unemployment. We all have the same interests. What are we going to do about it?

Mr. DEWALD. If I may answer, I think we should play it cool, not introduce a number of policies that don't have their impact immediately, but later on, in the recovery that I think is underway probably already—if not now, soon.

Representative RICHMOND. Why do you say that—why do you say the recovery is on the way? The recovery is not on the way.

Mr. DEWALD. Well, there are a number of signs of things that are precursors of recovery.

For one thing, because of the fact that the price level has fallen as much as it has and monetary growth has been as high as it has, real money balances have increased substantially. And this sort of growing wealth position of the economy is generally reflected subsequently in growing demand.

Furthermore, there are indications in terms of the fact that business firms got rid of a lot of inventory relative to sales in the first quarter of this year, that there is a prospect that if there is an increase in consumer demand—and we're seeing signs of it—that this may be reflected quite quickly in increased production as the economy comes out of the recession.

So, furthermore——

Representative RICHMOND. Just a minute.

How can you have increased sales when consumer credit costs as much as it does? How can a farmer go out and buy himself a new tractor to put John Deere back to work at these prices?

See, that is what is bothering me.

Mr. DEWALD. It is surprising that people are borrowing as much as they are at these interest rates. That is true not for just individuals, but for businesses, too. They are borrowing.

Representative RICHMOND. How can a farmer go and finance a new tractor?

Mr. DEWALD. They can finance it if they believe prospects for selling their product are such they can profit from it.

As far as investment is concerned, it's very interesting that in this recession investment has not fallen as much as it generally has.

One reason it has not is that we've had a major restructuring of the demand for the goods and services that are produced by our economy. And there's a necessity of producing new capital to meet the new demands of the economy.

Representative RICHMOND. We only have 4 more minutes. Perhaps we can hear from somebody else on this.

Professor Lombra.

Mr. LOMBRA. Yes, Congressman Richmond. All I would say, relative to what we are asked to discuss, is that if we want to get long-term interest rates down, at the same time we try to foster a recovery.

Representative RICHMOND. I think we all agree we're not going to have recovery until we get long-term interest rates down.

Mr. LOMBRA. I don't think that's a necessary condition for recovery.

Representative RICHMOND. In order to have recovery, you have to have capital investment. You can't have capital investment at these prices.

Mr. LOMBRA. They are a lot of other components of aggregate demand besides investment.

The only point I want to make is that if we're interested in recovery which is durable, that's lasting, that isn't as short as the recovery from the last recession--and it seems to me the way to insure that is to not increase monetary growth further.

We could debate about whether we wanted to reduce it or not, but I wouldn't increase it further. I would say that would be a sure road to a reacceleration of inflation, a short recovery, and what we have been through already—one has to look over—I know it's hard for policymakers to do that.

But the economy—the first thing monetary economists learn is to take a longer view, regardless of their persuasion. I think that's what we're preaching here. Urging or requiring the Federal Reserve to be more stimulative would be a grave error at this point in time.

Mr. RASCHE. I would like to second a lot of what Professor Lombra just said, in the sense that this is the third time in a little over a decade now that we've paid the up-front costs of trying to get inflation under control. We've gone through a serious recession.

Representative RICHMOND. So, we all agree—as Congressman Wylie says—we all agree that we shouldn't increase the amount of money available. I agree to it.

What else are we going to do? How are we going to make it attractive to American industry to retool? How are we going to reduce interest rates?

Mr. RASCHE. I think the way to do that is to make sure the inflation rate steadily comes down and to convince the American public that you, as Congressmen, and the Federal Reserve are committed to that kind of policy.

Representative RICHMOND. Which means cutting Government spending?

Mr. RASCHE. I think, as far as Government spending is concerned, it means we have to assure the public that the budget trajectory we're on over the next 4 to 5 years is not one of ever-widening deficits.

Representative RICHMOND. Of course, as you know, it is.

Mr. RASCHE. You certainly could make up projections of trajectories on very reasonable assumptions that look that way now; yes, sir.

Representative RICHMOND. Even the present budget requires Congress to vote some new taxes.

And it's very questionable, wouldn't you say so, Congressman Wylie, whether or not Congress would vote those new taxes?

Representative WYLIE. I wouldn't say that the budget necessarily would require additional taxes. But I think where the taxes come from is the real question.

I put an amendment to provide for some additional taxes on luxury items, similar to World War II, which are nonproductive. Now, if it comes from that, I wouldn't think that would necessarily add to inflation. It might, in fact, be a deflationary impact.

We have a vote on now.

You gentlemen have been very, very patient this morning. You have presented yourself—equipped yourself very, very well.

I would like to reserve the right for the record to submit some questions to you for the record. And we'll afford the other subcommittee members the same opportunity.

I've had four or five more questions which I want to follow up on money supply and ask you how we get a better handle on money growth and that sort of thing, which I think you are equipped to answer.

[The following written questions and answers were subsequently supplied for the record:]

RESPONSE OF WILLIAM G. DEWALD TO ADDITIONAL WRITTEN QUESTIONS POSED BY REPRESENTATIVE WYLIE

Question 1. From 1977 to 1980, M_1 growth averaged nearly 8 percent. In retrospect, was that too fast, too slow, or just about right?

Answer. M_1 growth of nearly 8 percent from 1977 to 1980 was clearly excessive. It was above the announced Federal Reserve targets. But more importantly it was unambiguously the source of the inflation that emerged in that period. M_1 growth of 4 percent or less would have been appropriate.

Question 2. Last year M_1 growth was only 5 percent (and only 2.3 percent if shift adjusted). In retrospect, was that too fast, too slow, or right?

Answer. M_1 growth of 5 percent in 1981 as a whole wasn't too bad. It was somewhat higher than the rate that would be associated with fully eliminating inflation. But its pattern of variation over the year was bad. M_1 growth was far too high through April continuing a pattern of inflationary growth that had begun in April 1980. In May 1981 M_1 growth was very sharply decelerated to a negative rate through October, then reaccelerated to an inflationary pace in November and December which unfortunately has been continued through the first 5 months of 1982. Unfortunately this stop-go pattern of M_1 growth was associated with related variation in short term interest rates with a lag of a month or two as documented in my written testimony.

Question 3. In the six months since November 1981, yearly M_1 growth has averaged nearly 7.5 percent. If this average is maintained for the next six months, the slow money growth experienced in 1981 will look like an unusual event. We will have done virtually nothing to slow the long-term money growth trend, hence, some say, done nothing to slow the long-term inflation trend, and soon inflation will return to that trend. Would you comment on this?

Answer. That M_1 growth averaged 7.5 percent from November 1981 through early June 1982 has already laid the foundation for renewed inflation and further increases in interest rates. Given trends in the velocity of money and long term real growth, 7.5 percent M_1 growth after markets had adjusted would tend to be associated with an 8 percent inflation rate. Having succeeded in killing inflation (at considerable real cost to the economy, I might add), it is simply irresponsible to pursue policies that promise its rebirth.

Question 4. What are the advantages of using M_1 rather than the monetary base in tracking monetary policy? What about M_1 versus M_2?

Answer. For the United States M_1 growth has been found to have a closer statistical association with nominal GNP growth and in turn inflation than have other monetary aggregates. Furthermore, each persisting increase or decrease in M_1 tends to be associated with nearly the same percentage increase in nominal GNP growth. Though M_1 is superior, both M_2 and the monetary base adjusted for required reserve ratio changes are prospective monetary aggregates to target and in fact are the appropriate targets in some other countries. Perhaps with changing institutions and market structures these aggregates might one day be best for the United States too.

Any of the three is subject to close control over a period of 2 or 3 months, though controllability is less precise the broader the monetary aggregate. The monetary base is the most controllable. It also possesses the characteristic of being "government issued money" and therefore is the basic denominator of current or future contracts to pay money. Growth in the monetary base is what feeds inflation when federal deficits are not financed fully by selling interest bearing federal securities. The monetary base in nearly perfectly controlled because the Federal Reserve has unlimited authority to create dollars of monetary base by purchasing open market securities. Because it has purchased nearly $140 billion of government securities in the past, it has ample authority to destroy dollars of the monetary base by selling securities. There is no question that it can control the monetary base.

Some mention of currency as the major component of the monetary base is necessary because many people have incorrectly concluded that controllability of the monetary base is adversely affected because three-fourths of it is currency held by the public. They assert that the public's holdings of currency are a given, independent of monetary policy. Though it is true that currency has been found to be statistically related to current and past GNP, the fact is that increases in the base are statistically reflected in increased M_1, M_2, and GNP. For example, in the 1970s the Federal Reserve doubled its holdings of securities. This was what caused the increase in GNP that induced people to roughly double their holdings of currency.

The following table shows the major balance sheet accounts of the U.S. monetary authority on the average for April 1982.

[In billions of dollars]

Assets		*Liabilities*	
Factors supplying the monetary base:		Factors absorbing the monetary base:	
Federal Reserve credit:		Treasury cash holdings and deposits with Federal Reserve banks	5
U.S. Government and agency securities	134	Other Federal Reserve liabilities and capital	6
Other Federal Reserve credit	16	Total	11
Total	150		
Gold stock	11		
Special drawing rights	4	The monetary base:	
Treasury currency outstanding	14	Currency in circulation	143
		Reserve accounts and required clearing balances with Federal Reserve banks	25
		Total	168
Total, assets	179	Total, liabilities and capital	179

There is no way that currency could have been $143 billion in April 1982 nor have increased by $89 billion since 1969 if the Federal Reserve hadn't held $150 billion of federal securities in April 1982 and have bought $92 billion since 1969. To a very large extent what determines the monetary base and currency is Federal Reserve open market operations. Even though the monetary authorities would like to believe that in supplying currency they are only meeting the needs of the public, the Federal Reserve creates the demand for currency by supplying monetary base that induces banks to create deposits and credit, and the public to spend, one consequence of which is an increase in the demand for currency.

Question 5. Some say NOW accounts, electronic fund transfers, telephone bill-paying accounts, new arrangements to automatically sweep excess funds out of

ndividual's checking accounts into investment accounts, and other new monetary instruments and procedures are impeding Federal Reserve control of the money supply. What is your comment on this?

Answer. It is true that there have been a lot of innovations in payments mediums in recent years. But it remains possible to measure money as a transactions medium all the same and to control it through Federal Reserve open market operations and required reserve ratios. The point is that the monetary base remains the monetary standard on which the monetary system is based. It is determined to an absolutely dominating degree by Federal Reserve actions. Furthermore, (a) transactions money as measured remains predictably related to the monetary base and (b) transactions money remains predictably related to total spending and the price level. Thus, despite innovations in the payments system, Federal Reserve control of monetary growth and thereby the major source of variations in aggregate demand and inflation is fundamentally not vitiated.

Question 6. Are the many new near money instruments and financial innovations causing the Federal Reserve to search for new broader approaches to measure financial (monetary) targets? Please comment on the following proposals for new broad targets: (1) nominal GNP; (2) total debt; and (3) total liquid assets. Would these targets be better than current money measures?

Answer. Total debt is an inappropriate target of monetary policy. First, the measure is so broad that control would be problematical. Second, the components are so diffuse that one could expect that major changes in their distribution would be important.

There are a few economists who think that there would be no inflationary consequences of the Federal Reserve holding the full $1 trillion of outstanding government securities and issuing that amount of the monetary base. (That would certainly cut down the interest on the government debt!) But such a deluge of liquidity would be expected to increase aggregate demand and the price level. Hyperinflations have always resulted when a government was either unwilling or unable to issue debt but only currency to cover deficits. The recent observations of Germany and Japan having kept inflation low despite high deficits is accountable to their not having permitted the monetary base to fuel growth in money and inflation. There are plenty of other historical examples. It seems clear that the distribution of debt among different categories with respect to liquidity or moneyness is very important.

A stable ratio of GNP to particular measures of total debt is observed and therefore some economists have proposed total debt as a monetary policy target. I disagree even though there is a link between the Federal Reserve's instruments of monetary control and total debt. There is similarly a relationship between the instruments of monetary control and nominal GNP. But the nature of lagged relationships affects the choice of a target. The evidence supports the interpretation that there is a very short lag between the instruments of monetary control and M1 money. There is some contemporaneous effect on total debt and GNP but also lagged effects of money that take a year or longer to work themselves out. Consequently M1 is a far better variable to try to control which is quickly and reliably affected by monetary control instruments. M_1 may be the major systematic influence explaining variation total debt or GNP, but not contemporaneously. Lags also make inflation an inappropriate short run target of monetary policy even though as time goes by the major systematic determinant of inflation is monetary growth.

Total liquid assets can be discarded as a target compared with narrower monetary aggregates. Liquid assets are not so closely related to nominal GNP as M_1, an observation that may be accountable to difficulties in consistently measuring and identifying what liquid assets are.

RESPONSE OF RAYMOND E. LOMBRA TO ADDITIONAL WRITTEN QUESTIONS POSED BY REPRESENTATIVE WYLIE

Question 1. From 1977 to 1980, M_1 growth averaged nearly 8 percent. In retrospect, was that too fast, too slow, or just about right?

Answer. There is little doubt that M_1 growth was too fast over the 1977–80 period. It encouraged, permitted, and perpetuated the advance of prices, exacerbated costs of disinflation being experienced now, and contributed to the economic and political malaise of the era.

Question 2. Last year M_1 growth was only 5 percent (and only 2.3 percent if shift adjusted). In retrospect, was that too fast, too slow, or right?

Answer. Using the Fed's shift-adjusted figure (2.3 percent) for 1981, I would argue that the deceleration of money growth from the inherited 8 percent trend was too much too fast, thereby contributing to, if not causing, the 1981–82 recession. Moreover, the sharp rise in real interest rates and decline in real economy activity, coming at a time when firms had not really recovered from the earlier downturn, increased the short-run costs of reversing the poorly designed policies of the 1970's.

Question 3. In the six months since November 1981, yearly M_1 growth has averaged nearly 7.5 percent. If this average is maintained for the next six months, the slow money growth experienced in 1981 will look like an unusual event. We will have done virtually nothing to slow the long-term money growth *trend*, hence, some say, done nothing to slow the long-term inflation trend, and soon inflation will return to that trend. Would you comment on this?

Answer. This is too pessimistic a view. The composition and timing of M_1 growth through June suggests the trend is well below 7.5 percent. Looking ahead, the problem to be avoided in the second half is the re-acceleration of money growth which has usually accompanied and unduly reinforced recoveries.

Question 4. What are the advantages of using M_1 rather than the monetary base in tracking monetary policy? What about M_1 versus M_2?

Answer. Monetary theorists have long emphasized the central importance of the volume of the means of payment (transactions balances) circulating in an economy. This theoretical support for M_1 has been buttressed by empirical work inside and outside the Fed which suggests that the relationship between GNP and the monetary aggregates is tightest for M_1. A central issue, of course, is the accurate measurement of the volume of circulating media. For example, should overnight repurchase agreements, overnight Eurodollar deposits, money market mutual funds, or some portion thereof be included in M_1? Only continued monitoring and research, as the Fed is engaged in, can provide the answer.

Question 5. Some say NOW accounts, electronic funds transfers, telephone bill-paying accounts, new arrangements to automatically sweep excess funds out of individual's checking accounts into investment accounts, and other new monetary instruments and procedures are impeding Federal Reserve control of the money supply. What is your comment on this?

Answer. There is no evidence I am aware of which supports the view that such developments impede monetary control over six month periods. Research within the Fed, and work by Robert Rasche and James Johannes suggest that while tight month-to-month control, say a control error of no more than 1% at an annual rate, is probably not feasible, the large monthly control errors dissipate over longer horizons.

Question 6. Are the many instruments and financial innovations causing the Federal Reserve to search for new broader approaches to measure financial (monetary) targets? Please comment on the following proposals for new broad targets: (1) nominal GNP; (2) total debt (excluding debt owned by financial institutions) and (3) total liquid assets? Would these targets be better than current money measures?

Answer. Yes. In recent months, for example, Frank Morris and Anthony Solomon, Presidents of the Boston and New York Federal Reserve Banks, respectively, have addressed this issue. As for possible alternative or supplementary targets, I am attracted to nominal GNP for it would contribute to a significant upgrading of the quality of the discussion surrounding monetary policy. As a supplement to a single monetary aggregate objective (multiple objectives for the aggregates should be dispensed with), the Fed would need to make its assumption about velocity explicit, clearer signals would be sent to those involved in the setting of wages and prices, and the coordination with fiscal policy should be enhanced. As for total debt or total assets, which have been proposed as alternative or supplementary targets, recent work by Benjamin Friedman suggests such broad targets might be viable and useful. At the moment, however, this research is too preliminary to justify the use of such targets in the policy process.

Question 7. On page 15 of your prepared statement, you note that "the inflationary expectations approach consistently underpredicts short-term rates." In that context, I would like to call attention to page 2 of your prepared statement where you note that real interest rates to a lender consist of nominal interest rates adjusted for both expected inflation and expected taxes over the period of the loan. I regret that you choose not to elaborate on the effect of taxes on

saver's calculations of the real rate of return. It is my impression that the last year or two may have seen a marked acceleration in public awareness of the impact of taxes on the real rate of return from taxpayers' savings. For example, if a Treasury bill yields 12 percent and the saver's marginal income tax rate is 33 percent, the after-tax nominal yield to the saver is 8 percent. To me, it is clear that it is the 8 percent number which should be and is being used by savers as the starting point for their calculations of real rates of return. Consequently, if the expected rate of inflation is 5 percent, the real, after-tax rate of return is 3 percent for any taxpayer with a marginal tax rate of 33 percent. Do you agree that this effect goes some of the way toward explaining the spread between current low rates of inflation and high rates of interest on savings instruments?

Answer. As your example demonstrates, taxes do play an important role in linking real and nominal interest rates in an inflationary environment. However, this observation does not appear to explain the relatively poor performance of the inflationary expectations approach. To illustrate, if the inflation rate (and inflationary expectations) rise by 1 percent, then nominal interest rates would need to rise by 1 percent plus an adjustment for taxes to leave a saver's real return unchanged. Such a relationship, if it exists, would be captured by the size of the coefficient on the inflationary expectations variable in a regression explaining the movement of nominal interest rates. That is, such a tax effect should be already included in the estimates. While I wouldn't rule out the possibility that heightened public awareness of the impact of taxes in recent years may explain part of the puzzle, the lack of hard evidence on this point leads me to emphasize the relevant points of my prepared statement—namely, that deregulation and innovation have required the Fed to engineer the higher level of real interest rates to achieve the desired degree of monetary restraint.

Response of Robert H. Rasche to Additional Written Questions Posed by Representative Wylie

Question 1. From 1977 to 1980, M_1 growth averaged nearly 8 percent. In retrospect, was that too fast, too slow, or just about right?

Answer. In retrospect, and indeed even in prospect, the M_1 growth at an average rate of 8 percent over the 1977–80 period was too fast. At the end of 1976, coming out of the sharp and severe recession of 1975, we had seen substantial progress in the reduction of inflation. Some of this was attributable to the stabilization of world oil prices, but progress had been made beyond just this. Even the Federal Reserve had been on record since at least 1974 as favoring a reduction in the long-run rate of growth of money to reestablish noninflationary conditions. The eight percent average rate of growth over the 1977–80 period did not represent progress toward that goal.

Question 2. Last year M_1 growth was only 5 percent (and only 2.3 percent if shift adjusted). In retrospect, was that too fast, too slow, or right?

Answer. The reduction of M_1 growth in 1981 to five percent was brought about by a very substantial reduction in the growth rate in the first six to nine months of the year, followed by a substantial reacceleration in the latter part of the year. That pattern has had both costs and benefits in the short run. It has contributed to the recession that we have experienced in the last part of 1981 and the first half of 1982. It has also contributed to the slowing of inflation that we have experienced in 1982. The short-run aspects of that experience are now sunk costs that cannot be reversed. Whether the reduction to five percent growth in M_1 for 1981 in the manner that it occurred was too fast or too slow, or just right now largely depends on the long-run costs and benefits. If policy from now on is oriented to a continuation toward price stability and a steady recovery from the current recession, then ultimately, the 1981 experience will prove valuable. If however, future policy becomes oriented toward provoking a quick recovery and provokes a reacceleration of inflation, as occurred in 1977, then we will have repeated another cycle of paying the immediate costs of an anti inflation policy without incurring any of the long-run benefits.

Question 3. In the six months since November 1981, yearly M_1 growth has averaged nearly 7.5 percent. If this average is maintained for the next six months, the slow money growth experienced in 1981 will look like an unusual event. We will have done virtually nothing to slow the long-term money growth trend, hence, some say, done nothing to slow the long-term inflation trend, and soon inflation will return to that trend. Would you comment on this?

Answer. My comment that you cite in your questions, was not specifically addressed to the question of the binding or non binding nature of the Federal Reserve's annual monetary targets. Our experience with these targets since their introduction is that they have not proved binding, and, so far, Congress has not penalized the Federal Reserve for failure to meet its stated objectives. Implicitly private markets have penalized the Federal Reserve for its failure to perform, in that the degree of credibility attributed to Federal Reserve pronouncements has deteriorated over the years. This is the credibility problem to which I was referring, and this situation can result in significant costs to our economy.

Question 4. What are the advantages of using M_1 rather than the monetary base in tracking monetary policy? What about M_1 versus M_2?

Answer. Over the long run, it probably does not make substantial difference whether the monetary base, M_1 or M_2 is used to track monetary policy, though many statistical studies suggest that historically movements in M_1 have demonstrated a closer relationship to movements in nominal GNP than the other two aggregates. In particular short-run circumstances, such as in 1981, when changes in regulations are likely to produce sharp shifts in the portfolios of various economic units (e.g., the legalization of nationwide NOW accounts) which cannot be predicted from historical information, it is probably preferable to use the monetary base until information becomes available on the nature of the portfolio shifts.

Question 5. Some say NOW accounts, electronic funds transfers, telephone bill-paying accounts, new arrangements to automatically sweep excess funds out of individual's checking accounts into investment accounts, and other new monetary instruments and procedures are impeding Federal Reserve control of the money supply. What is your comment on this?

Answer. NOW accounts, electronic funds transfers, and similar innovations in payment technology over the past decade have not created any lasting degradation in the ability to forecast the relationship between the M1 concept of money and aggregates that are under the direct control of the Federal Reserve, such as the monetary base or unborrowed reserves, at least as far as some of the forecasting devices that are available. Thus, such technological changes should not impede Federal Reserve control of the money stock. Whether the technological changes do impede the Federal Reserve's control of the money stock depends in addition on how the Fed behaves in this environment.

Question 6. Are the many new near money instruments and financial innovations causing the Federal Reserve to search for new broader approaches to measure financial (monetary) targets? Please comment on the following proposals for new broad targets: (1) nominal GNP; (2) total debt (excluding debt owned by financial institutions) and (3) total liquid assets. Would these targets be better than current money measures?

Answer. The usefulness of alternative targets (to M1) depends upon the relationship of such targets to nominal GNP, and upon the relationship between the alternative target and the instruments that the Federal Reserve has available to influence the economy. Nominal GNP is perfect on the first criterion, but I know of no studies that have indicated that there is a precise forecasting device that would allow the Federal Reserve to focus on direct short-run control of nominal GNP. Similarly, there are considerable problems in the Federal Reserve implementing a control procedure over total debt that have not been satisfactorily answered by the advocates of this aggregate.

Representative WYLIE. At this point, what I think we should do—and this would be the prudent course right now—is to excuse you and to say thank you very much for coming before the Joint Economic Committee.

You, as I said, have done excellently, and we appreciate it. Thank you very much.

[Whereupon, at 11:45 a.m., the subcommittee adjourned, subject to the call of the Chair.]

○